

Amendments to the Claims

Claims 1 – 22 (canceled).

23. (new) A method of detecting a low power condition in a local area augmentation system, comprising:

- receiving at least one global positioning satellite radio signal;
- measuring an average wide band power associated with the radio signal;
- measuring an average narrow band power associated with the radio signal;
- calculating a signal-to-noise ratio of the radio signal from the wide band power and the narrow band power;
- calculating a lower confidence limit of the signal-to-noise ratio;
- determining, from a lower confidence limit, a low-power condition error contribution,
- calculating a total error in a navigational measurement based at least in part on the low-power condition error contribution;
- determining whether the total error exceeds an alert limit; and
- issuing an alert if the error exceeds the alert limit.

24. (new) The method of claim 23, wherein determining the lower confidence limit subtracting a confidence offset from the calculated signal-to-noise ratio.

25. (new) The method of claim 24, wherein the confidence offset dS/No_{low} is determined by the following equation:

$$P_{lim} = \int_{-dS/No_low}^{\infty} pdf(x) dx.$$

26. (new) The method of claim 23, wherein measuring a wide band power includes averaging the wide band power over the first time period to obtain a value P_w , and wherein measuring a narrow band power includes averaging the narrow band power over the second time period to obtain a value P_n .

27. (new) The method of claim 26, wherein the first time period has a length T , the second time period has a length that is M times as long as T , and the signal-to-noise ratio S/No is calculated according to the following equation.

$$S/No = 10 \log_{10} \left[\frac{1}{T} \frac{P_n - P_w}{MP_w - P_n} \right]$$

28. (new) The method of claim 23, further comprising:

determining a navigational measurement based at least in part on the received radio signal; wherein the low-power error contribution is an error in the navigational measurement.

29. (new) In a local area augmentation system, a system for detecting a low-power condition comprising:

a receiver operative to receiving at least one global positioning satellite radio signal; a wide band power estimator operative to measure an average wide band power; a narrow band power estimator operative to measure an average wide band power;

a signal-to-noise ratio module operative to determine a signal-to-noise ratio from the estimated wide band power and the estimated narrow band power;

 a confidence limit logic module operative to calculate a lower confidence limit of the signal-to-noise ratio;

 a total error module operative to calculate a total error based at least in part on the lower confidence limit; and

 alert logic operative to determine whether the total error exceeds an alert limit and to issue an alert if the error exceeds the alert limit.